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Some hypothetical evolutionary lines relating to the Phocean Red Slip Ware types 3F/G, 3G and 3/10

Algunas líneas hipotéticas de la evolución de la *Terra Sigillata* Focense Tardía, tipos 3F/G, 3G y 3/10

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This paper discusses the typological evolution of Phocean Red Slip Ware (LRC) forms during the central decades of the 6th century AD, with regard to the evolution from type Hayes 3F into types 3G and 3/10, before the arrival of the latest shape (form Hayes 10) in the second half/late 6th century AD. Published and unpublished stratigraphic data from several regions of the Late Antique world, both in the Mediterranean and Atlantic are observed and three hypothetical evolutionary lines, in terms of their chronology and morphology, are discussed as a possible tool for further research on the subject.

KEYWORDS

PHOCEAN RED SLIP, FORMS HAYES 3 AND 10, CHRONO-STRATIGRAPHY, CENTRAL DECADES OF THE 6TH CENTURY, MEDITERRANEAN AND ATLANTIC

Este artículo discute la evolución tipológica de las formas de la *terra sigillata* focense tardía (LRC), durante las décadas centrales del siglo VI, en particular los tipos Hayes 3F, 3G y 3/10, antes de la llegada de la morfología tardía Hayes 10 en la segunda mitad-finales del siglo VI. Son discutidos datos estratigráficos publicados e inéditos de diversas áreas del mundo tardoantiguo, tanto del Mediterráneo como del Atlántico, y se problematiza tres líneas evolucionarias hipotéticas, en términos de cronología y morfología, en cuanto posible herramienta de trabajo de investigación futura.

PALABRAS CLAVE

TERRA SIGILLATA FOCENSE TARDÍA, FORMAS HAYES 3 Y 10, CRONOESTRATIGRAFÍA, DÉCADAS CENTRALES DEL SIGLO VI, MEDITERRÁNEO Y ATLÁNTICO

Introduction

The 6th century AD, as post-Roman Late Antiquity in general, remains a problematical period for those who intend to study its phenomena. This is particularly true in the case of the dating of contexts and economic trends from the ceramic evidence in those areas that did not receive African Red Slip Ware. This problem is particularly severe for Atlantic sites of the Iberian Peninsula, for they shift different patterns of consumption after the first quarter of the 5th century AD, when the penetration of Barbarians tribes intensifies changes related to the new Mediterranean rhythms established over the Vandal and Byzantine historical processes (Reynolds, 2010).

In this sense, the late forms of Phocaean Red Slip Ware, which reach intensively some parts of the European shore of the Mediterranean and Atlantic areas of the Iberian Peninsula, as well the former Roman province of *Britannia*, are a major tool for contextual dating and the comprehension of trade routes.

In this paper we intend to discuss the typological evolution of Phocaean Red Slip Ware during the central decades of the 6th century AD, when Hayes form 3 evolves from variant 3F into variants 3G and 3/10, leading to the main form of the second half/late 6th century AD, Hayes 10. If Hayes 3C, which is widely distributed in the late 5th century AD, is easy to classify, Hayes 3E, 3F and G compete for their markets in a diffuse pattern that poses huge problems for their morphological and chronological understanding. Hayes 3E is nevertheless morphologically distinguishable with respect to the other referred variants, given its closer shape to Hayes 3C.

In other words, dating the central decades of the 6th century is still a hard task for ceramicists and leads often to problematic misinterpretations of possible late Vandal and early Byzantine contextual phases. Furthermore, important old collections and assemblages from statistically weak or unstratified contexts remain easily too flexible in their chronological placement, which can be either more conservative (earlier dates) or more progressive (later dates), in function of the thinking of the researcher.

1. State of art

After the conceptualization carried out by Waagé (1948) in the middle of the 20th century, when the term Late Roman C was applied to this late Roman red slip ware and was maintained by Hayes in his typology (Hayes, 1972), Hayes later proposed to rename it Phocaean Red Slip Ware (Hayes, 1980), taking into account evidence that finally related this production to this region of modern Turkey.

In *Late Roman Pottery* (Hayes, 1972) (hence *LRP*), Hayes has systematised 10 forms, among which his form 3 is by far the most common of the series on Mediterranean and Atlantic sites, with a floruit in the late 5th and first half of the 6th century AD.

Nevertheless, these 10 forms were still beset by chronological problems, especially in the case of form 3, classified into sub-types 3A to 3H, whose morphology and development into form 10 is by no means straightforward. Hayes has stated later that “Phocean and Cypriot potters, though starting from the same models, soon moved away from the silver ware norm” and stressed the problems for archaeologists dealing with late Vandal and early Byzantine fine wares: “the problem area now moves to the 6th and 7th centuries, and here there are, I think, still major disagreements” (Hayes, 1998: 10-11).

This very idea was recently emphasized once again in the *Late Roman Fine Wares* workshop held in Barcelona “It was unanimously agreed that, as presented in LRP, LRC 3 remains a difficult form to classify when faced with the identification of rims ‘in the field’”. “The degree to which some were considered part of a ‘linear’ sequence or were simply parallel products from several contemporary workshops was outlined” by Hayes (Cau, Reynolds and Bonifay, 2011).

We can divide the main bibliography used in this paper in two groups: typological studies (or usually referred in this way) and contextual works. The first group includes the publication of the excavations from Antioch, given its importance for the first knowledge of types Hayes 3F/G and 3G (Waagé, 1948).

After the abovementioned work from Antioch which first defined this fine ware typology and remained for decades the main reference for type Hayes 3G, whose profiles were essentially known only from the upper parts of the vessels (Waagé, 1948), LRP established types Hayes 3F and G and defined Hayes 10 as the successor of form 3.

According to LRP, type Hayes 3F is a continuation of types 3D and 3E, with a lower rim that projects more strongly, being externally concave or still rolled as on type 3D, with offset at the junction of the rim with the wall. Some vessels may bear rouletting on the outer rim. Type Hayes 3G is close to type Hayes 3F, but the outer rim face is flat or slightly convex. Rouletting never occurs on this variant. Form Hayes 10, Type A presents a heavy rim with knobbed or squarish profile (Hayes, 1972: 331, 343).

Hayes later presented some ideas on the development of the Phocean Red Slip Ware, basically outlining the difficulties with respect to the 6th century types (Hayes, 1998). The collection from the Austrian excavations at Ephesos allowed the definition of the transitional type Hayes 3/10, as a deeper dish, with low, squarish rim, sometimes with an inner chamfer, but always introverted (Ladstätter and Sauer, 2005). One decade earlier the collection from Istanbul-Saraçhane had allowed the definition of a transitional profile called Hayes 3F/G, with lower rims and/or with a slightly concave inner rim face (Hayes, 1992).

In 2011, the *Late Roman Fine Wares* workshop tried to gather the main contextual information available at that moment concerning the main late Roman fine ware typologies. This effort also listed the main contexts relevant for the dating of these ceramics (Cau Ontiveros, Reynolds and Bonifay, 2011; Reynolds, Bonifay and Cau, 2011). This work emerged after some four decades of stratigraphic excavations, some of which are here key for the understanding of the development of PRS.

The large assemblage from Benalúa (now a suburb of the port of Alicante) is an important context of the third quarter of the 6th century AD in south-eastern Spain (Reynolds, 1987). Saraçhane (Istanbul) provided important data on the entire lifespan of this typology (Hayes, 1992), as also the final publication of the late Roman fine ware finds from the Athenian Agora (Hayes, 2008), which previously had provided many key pieces for LRP (Hayes, 1972).

In 2004 and 2011, Reynolds published two stratigraphic series from the Triconch Palace at Butrint (present Albania) and Beirut, that are key for the evolution of types Hayes 3F, 3F/G and 3G, the first case providing essentially information related to the evolution of the PRS of the second quarter of the 6th century AD, while Beirut concerns this typo-chronology from the mid-5th century to AD 551 (the Beirut earthquake deposits) (Reynolds, 2004, 2011a). Within this spectrum of c. 525-550 AD, the site of the Ciudadela de Rosas, on the Catalan coast of the Iberian Peninsula, has provided some data (Hayes 3F) in its context G VIII (Nieto Prieto, 1993), to which we can add some strata from the former *Lusitania* (present day Portugal), namely at Almoínhas and Frielas in the environs of *Olisypونا*/Lisbon (Quaresma, forthcoming; Quaresma, 2017).

Also near Lisbon, the former commercial capital of Lusitania, another site contains stratigraphy related to the third quarter of the 6th century AD: Alto do Cidreira (Sepúlveda, Bolila and Santos, 2014-2015). In *Olisypونا*/Lisbon, a trench fill at the sector of Palácio dos Condes de Penafiel has also provided data on this subject (Quaresma and Silva, forthcoming).

Finally, the port of Vigo, in the far northwestern corner of the Iberian Peninsula, has provided important contexts dated to the first half/second quarter of the 6th century AD, to the end of this century and to the first half of the 7th century AD (Fernández Fernández, 2014).

This means that the period of 550+ AD is represented so far only by the aforementioned sites from the region of Lisbon, as far as the Atlantic coast of the Iberian Peninsula is concerned.

With regard to the chronological evolution of these various sub-types of Hayes 3, *LRP* (Hayes, 1972: 338, 345) established type Hayes 3E as the first form of the 6th century AD, starting around 500 AD. This shape would be supplanted by types Hayes 3F and 3G during the second quarter of that century, while at this stage of the research Hayes proposed type Hayes 10A as a “many years later” form, whose earliest sherds belong to layers of the 580s in the Athenian Agora, while Ephesos provided information from the second half of the 6th century (Ladstätter and Sauer, 2005). According to Hayes, the earliest dates for Hayes 10A are nevertheless insufficiently consistent, especially taking into account the problematic chronology proposed by Waagé in 1948 based on the stratigraphic evidence from Antioch (Waagé, 1948: 56). This chronological point refers to the earthquake of Antioch in 526 AD and its consequent layers, which contain Hayes 3F/G and 3G. The historical interpretation of this stratigraphic phase that led Waagé to forcedly identify the archaeological evidence with the historical data has been criticized (Cau, Reynolds and Bonifay, 2011b: 6).

In the publication of the fine wares from the Athenian Agora, Hayes presents a review of some ideas, reinforcing the importance of type Hayes 3F in the second quarter of the

6th century (Hayes, 2008). He proposes this period as the latest in the lifespan of the type, taking into account the evidence from St. Polyeuktos-Istanbul (527 AD), where Hayes 3F is rare, and the evidence from Leijun (c. 550 AD) and Beirut (551 AD) — both sites located in the Near East hinterland. But the most important consideration in this book is the review of the initial chronology of type Hayes 10A that Hayes accepts as earlier than proposed previously, in the line of the final dating for type Hayes 3F (Hayes, 2008: 86). Some years later, this proposal was enhanced in the *Late Roman Fine Wares* workshop, where the list of reference contexts includes S. Giovanni di Ruoti/Period 3B, in the middle of the 6th century AD: this phase shows the stratigraphic interaction of types Hayes 3E, 3F and 10A (Reynolds, Bonifay and Cau, 2011: 20).

Nevertheless, the quantifications from Butrint and Beirut led to a complexification of this process, since the contexts from 525-550 AD in the first site show the prevalence of type Hayes 3F over type Hayes 3G in this phase, as well as the absence of type Hayes 10 (Reynolds, 2004: 228). In this context (context 1152), some of the drawn examples of Hayes 3F may hypothetically be classified as Hayes 3F/G, since they show some variability among their rims: more or less degree of external convexity, presence or absence of rouletting, but an omnipresence of an inner concavity and a plain, oblique, rim top (Reynolds, 2004: nos. 137, 139-141).

The rich stratigraphy from Beirut demonstrates exactly the complexity of the evolution within the morphology of Hayes Form 3. Context BEY 006 11081 ('530-540 AD?') contains Hayes 3F and 3G, BEY 006 20201/20202 (551 AD) contains 5 individuals of Hayes 3G and a possible sherd of Hayes 10A, BEY 006 2528 and 2483 (AD 551) contains a possible sherd of Hayes 3F/G and BEY 006 20216 and 20239 (AD 551) includes Hayes 3F and mainly Hayes 3F/G (Reynolds, 2011a). One can reevaluate some of the proposed classifications, for instance with regard to BEY 006 20201/20202 (AD 551), where nos. 103 and 106 of the publication may be classified as Hayes 3/10, given the squarish profile of the rim. Beirut's stratigraphy renders the evolution within this assemblage more complex than the situation observed at Butrint, where Hayes 3/10 is still absent in the second quarter of the 6th century. Nevertheless, context 1676 from Butrint, dated to 550-580 AD, contains Hayes 3F, 3G and 10C, with a prevalence of the first and the third subtypes (Reynolds, 2004: 232). The existence of subtype Hayes 10C in such an early layer puts immediately in mind the aforementioned recent proposal of Hayes on the lowering of the starting date of type Hayes 10A into moments previous to the last quarter of the 6th century, that is somewhere in the segment of 550-575 AD (Hayes, 2008).

The stratigraphy of Vigo, in the Northwestern shore of the Iberian Peninsula, indicates type Hayes 3F as predominant during the first half of the 6th century. This is usually plain, since only 5% bears rouletting. The absence of Hayes 3G and 3/10 in contexts of 500-550 AD leads the author of this study to propose a starting date —for these two types in the third quarter of the century. A different shape within type Hayes 3 is the so-called "Hayes 3 de bordo reentrante" (introverted rim-shaped Hayes 3), which is also absent from the Vigo contexts of 500-550 AD (Fernández Fernández, 2014: 252). This variant is also present at

Frielas (Quaresma, 2017), near Lisbon. For this study we have chosen a different name for the shape: “Hayes 3G, var.”. Those types—Hayes 3G, 3/10 and introverted rim-shaped Hayes 3/Hayes 3G var.—, following Fernández, are attested in late 6th century layers at Vigo, with no transitional stratigraphical data, given the absence of layers dated between 550 and the late 6th century AD (i.e. to 550-c. 575).

We must nevertheless reevaluate some of these conclusions, since the proposal of the absence of types Hayes 3G and Hayes 3G var. (= introverted rim-shaped Hayes 3) seems inaccurate. In fact, type Hayes 3G, both with more vertical or more squarish rim, is attested in the layers of AD 500-550, namely in context 18 (see *infra* nos. 22-24); the same can be said about type Hayes 3G var., since a slightly introverted rim was found in the same context (see *infra* no. 33). Secondly, the absence of layers from 550+ AD up to the end of the 6th century poses some major problems for the understanding of this typological process. This several decades gap may be due to residuality within the layers of the late 6th/first half of the 7th century, where those three subtypes are essentially positioned.

In this sense, the absence for instance of African Red Slip form Hayes 93 in the layers of 500-550 AD is also bizarre. Both subtypes Hayes 93A and 93B—10 individuals—appear only in the layers dated to the late 6th/first half of the 7th century. This situation represents a contradictory framework compared to the dating proposed in LRP, which place type Hayes 93 between 470 and 540 AD, being the second sub-type dated essentially to the 6th century AD (Hayes, 1972, p. 148). It is also a contradictory evolution, if compared to contexts in Carthage, where Hayes 107 emerges after 550 AD (Fulford and Peacock, 1984: 75), taking into account that this last form is commonly accepted as the successor of Hayes 93, usually sharing even the same fabric, according to the LRP (Hayes, 1972: 148).

Another Hispanic case concerning stratigraphic quantifications, *Iluro*, demonstrates also the presence of Hayes 93A and 93B in the second quarter of the 6th century (Cela Espín and Revilla Calvo, 2004: 220, fig. 16, SU 1006). A minimum of 17 and up to 36 rims of Hayes 93B, and 100 rims of the related smaller bowl Hayes 94, were present in the Benalua assemblage, which lacks late 6th century material (Hayes 105 is absent) (Reynolds, 1987; Reynolds, 1993, Appendix C). Hayes 93 seems thus another indicator of residuality in those layers from Vigo dated to the late 6th/first half of the 7th century, which imposes a careful observation of the typo-chronological conclusions obtained from them. The absence of layers between the middle and the final of the 6th century AD, when most probably those PRS types are evolving and being exported without any stratigraphic memory at Vigo, so far, is probably a crucial factor for the difference observed at this Atlantic consumption site.

The continuation of type Hayes 3F over the third quarter of the 6th century, in spite of our incapacity to establish the exact final moment, seems plausible in the face of the available stratigraphic data. If we take into account quantified contexts dated to 550+ AD, such as those of *Olysipona*/Lisbon-Palácio dos Condes de Penafiel and Alto do Cidreira, both located on the Atlantic shore of the Iberian Peninsula, type Hayes 3F is found with

Hayes 3/10 (Sepúlveda, Bolila and Santos, 2014-2015; Quaresma and Silva, forthcoming). The most important context for this chronology is nevertheless Benalúa-Alicante, on the Mediterranean shore of the Iberian Peninsula, where Hayes 3F is extensively represented, alongside types Hayes 3F/G, 3G, 3G var. and scarce finds of Hayes 10A. This context contains this last type—absent on the other two sites—, but it seems later than those two contexts. If the two first contexts may belong to the beginning of the third quarter of the 6th century AD, Benalúa is more convincingly dated to 550-575 or even 570 AD (Reynolds, 1987: 112-121).

2. Evolutionary lines

In this section we shall propose three hypothetical lines of evolution within the framework of types Hayes 3F/G, 3G, 3G var. and 3/10, presenting some earlier shapes related to Hayes 3F or 3F/G and some later shapes related to type Hayes 10A. In this sense, our chronostratigraphical observation focuses mainly on layers from the central decades of the 6th century AD, though the first and latest decades of this century are referred to also, given their relation to certain types. This paper is not an exhaustive list of contexts of the entire 6th century, nor of the sherds of these types. The goal is both to gather crucial stratigraphic information directly concerned with those morphologies and identify their initial chronologies, so one is able to infer their complex chronological interaction. More than subsequent chronological lines of development, the stratigraphic evidence points strongly to a mosaic evolution, from 525 AD onwards, with the nature of the development in the second half of the 6th century still being quite problematic, for the relative lack of good contexts containing PRS. The exact transition to type Hayes 10, which became fully evolved as a shape somewhere in this last period, remains thus unknown. During the research for this paper we have gathered stratigraphic data from several sites, presented in the figs. 1-7 (Almoínhas: Quaresma, forthcoming; Alto do Cidreira: Sepúlveda, Bolila and Santos, 2014-2015; Antioch: Waagé, 1948; Athenian Agora: Hayes, 2008; Beirut: Reynolds, 2011a; Benalúa: Reynolds, 1987; Butrint: Reynolds, 2004; Frielas: Quaresma, 2017; Lisbon-Palácio dos Condes de Penafiel: Quaresma and Silva, forthcoming; Saraçhane: Hayes, 1992; Vigo: Fernández Fernández, 2014).

2.1. Evolutionary line 1

This evolutionary line presents more vertical rims, with strong morphological relations to type Hayes 3F, given the light thickening of the rims all over the evolution of this line. Some decoration on the outer rim can appear in subtypes Hayes 3F or 3F/G and 3F/G, being the next morphologies apparently always plain.

Hayes 3F or 3F/G

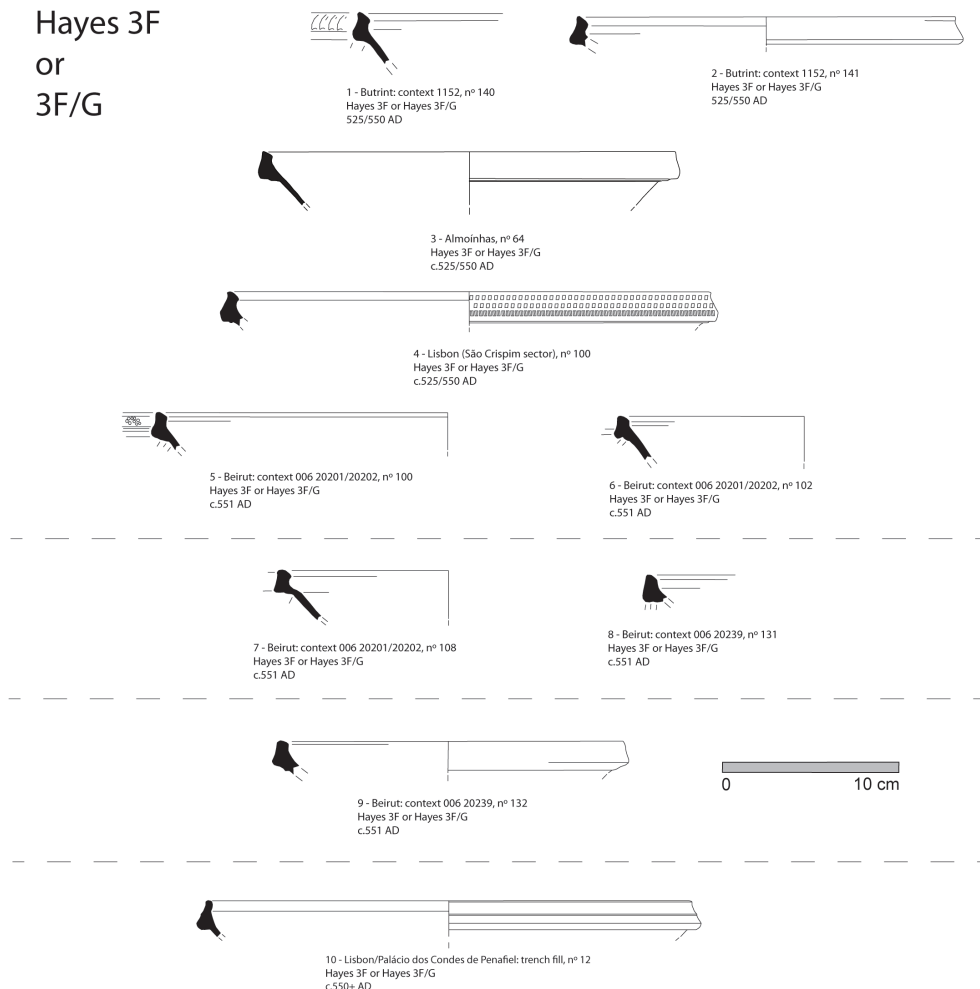


Figure 1. Evolutionary line 1.

A number of specimens may belong to a transition between Hayes 3F and 3F/G, with stronger morphological relations to type Hayes 3F. Nevertheless, it does not seem to occur before c. 525 AD (nos. 1-4). Although this chronological suggestion, we may observe rims with slight inner concavity and more or less bevelled rim top during the 525-550 AD. Around 550 AD rims may tend to thicken and have a flatter outer surface (nos. 5-9). During this stage, rims remain low, although nr. 10, from 550+ AD present a slightly taller rim, still rolled in the bottom and marked by an inner groove. Around 550 AD the wall may evolve to thickener examples (nr. 9) (fig. 1).

Hayes 3F/G

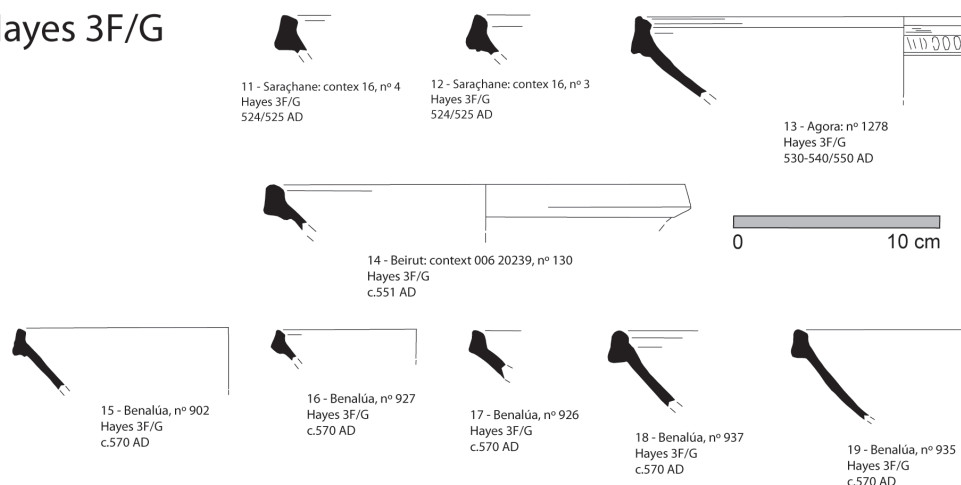


Figure 2. Evolutionary line 1.

A second stage of this evolutionary line relates to Hayes 3F/G (nos. 11-19). It is characterised by low, but thicker rims, still slightly concave in the inner surface. The rim tops may be bevelled (nos. 11, 13, 15, 19) or rounded (nos. 14, 18). The inner concavity is not always observable, being sometimes straight and almost vertical-shaped (no. 15). The bottom of the rim is still rolled, but to a lesser degree than in the previous stage, being already possible that some few examples present a more angular bottom (no. 17). Walls seem to be more often thicker than in the previous morphology (nos. 13, 17, 18). However, the diameter of the rims and the wall depth remain apparently the same, in spite of the absence of complete individuals (fig. 2).

The verticality of these rims seems to increase among some vessels of the second quarter of the 6th century and achieves a new morphology that one can denominate as Hayes 3G (nos. 20-31). Given the representativeness of this kind of Hayes 3G at Benalúa, it is thus suggestive that it may evolve chronologically until the third quarter of the 6th century. The wall depth remains similar, in spite of the lack of complete individuals across the analysed contexts. Nevertheless, vessels such as no. 21, from the Antioch earthquake levels (526+ AD?) and no. 26, from the Benalúa deposit of the 570s are deeper and their walls thicker. In this last case, one can observe simplified decoration on the outer surface of the rim, but this type of Hayes 3G is essentially plain (Hayes, 1972). This assemblage of Hayes 3G comprises vessels with slightly concave inner rims and presents essentially vertical rim shapes. Nevertheless, some of them can be still round-shaped (nos. 24 and 25 and even no. 26) (fig. 3).

The wall depth of vessels and the thickness of walls clearly increase in those central decades of the 6th century with respect to a small group of examples of Hayes 3G var.?

Hayes 3G

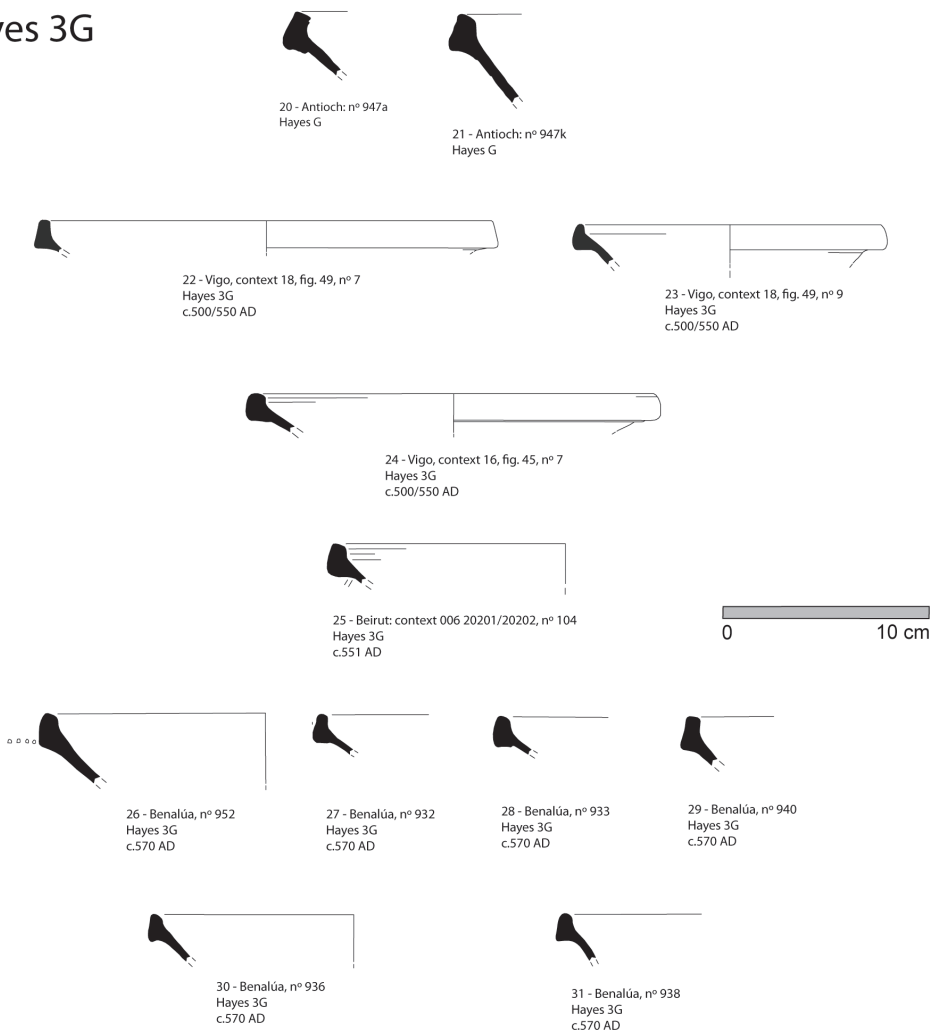


Figure 3. Evolutionary line 1.

(= Hayes 3 *de borde reentrante*/introverted rim-shaped Hayes 3). Nevertheless, the size of diameters remains stable, in spite of the largeness of no. 32.

In this group one can observe a feature that becomes standard, in contrast to the other variants analysed previously: the stronger depth of walls renders them more contra-curve shaped producing an incipient S-profile at their upper segment, just beneath the rim. This feature is very clear on no. 32, although no. 36 presents a more straight wall, while no. 37 a slightly curved, but irregular wall.

Hayes 3G, var.?

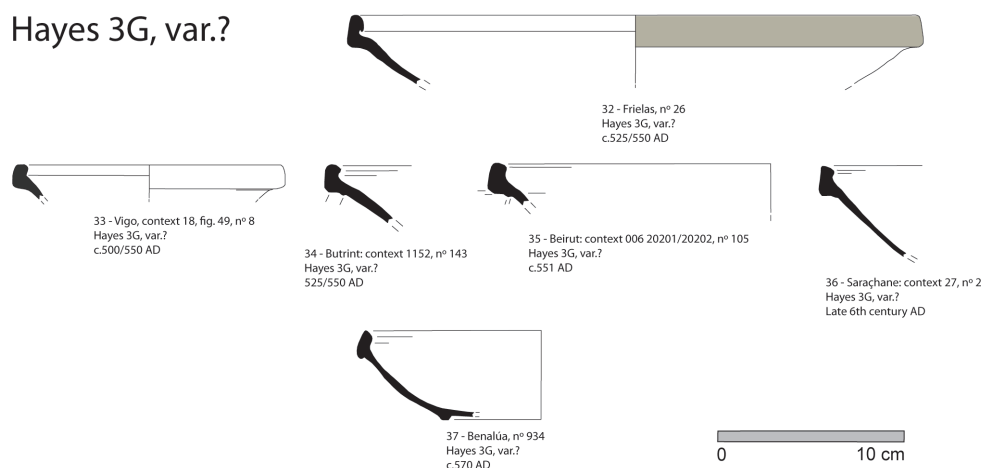


Figure 4. Evolutionary line 1.

In spite of the smaller sample related to this variant (Hayes 3G var.), examples they generally have an extremely concave inner rim, sometimes with pronounced inner hook (nos. 32 and 34), while the outer surface is flat. This group may date to 525-550 AD, taking into account that a less clear example (no. 36) may be residual in the late 6th century AD Saraçhane context 27. It is reasonable to suppose that the third quarter of the 6th century AD produced a final evolution of the shape within this line, but there is only a single example for this proposal (no. 37).

In fact, no. 37 presents special and singular features: its rim is extremely rolled/undercut at the bottom and the outer curve of the rim is now quite pronounced. The outer surface is no longer flat, but convex. From the 570s context of Benalúa, it seems to be an evolution similar to that observed within Cypriot Red Slip Ware during the central decades of the 6th century, when type Hayes 2 evolves into type Hayes 9A. According to Meyza, type Hayes 9A (=type K3A) begins in 530/540 AD (Meyza, 2007: 66), while the LRP proposes 550 AD (Hayes, 1972: 373). Reynolds has recently discussed this transition, from data collected at Beirut. According to this author, BEY 006 contexts of 551 AD “provide a better illustration of the early versions of LRD 9A, vessels that of course must have emerged pre-551, so perhaps by 540 or 530”, with incipient introversion of the rims (Reynolds, 2011b: 63). Our no. 37 seems quite similar to LRD type Hayes 9B, with a developed rim, which has been dated in LRP to 580 AD onwards (Hayes, 1972: 379). In this sense, this Phocean shape Hayes 3G var.? from Benalúa seems thus to precede the morphological evolution observed within Cypriot Red Slip Ware/Late Roman D, which produced largely this shape in the late 6th century AD. In this sense it is perhaps reasonable to suggest that the presence of foot-ring on no. 37 is probably an earlier feature, since in CRSW/LRD form Hayes 2, the foot-ring is present, but CRSW form Hayes 9 abandons this aspect by presenting incipient foot and thick bottom (fig. 4).

2.2. Evolutionary line 2

This hypothetical evolutionary line is made of deep, large, thick-walled vessels, with thick, but vertical rims. It is also by far the best represented evolutionary line with regard to possible contemporary contexts (nos. 38-48). In contrast to the other two proposed evolutionary lines, this seems to centre its lifespan in 525-550 AD, with a possible extension into the third quarter of the 6th century AD.

A first stage of this morphology concerns type Hayes 3F/G (nos. 38-41). Its walls are essentially curved, those of no. 38 being slightly S-shaped. Their rims are slightly introverted with slight inner concavity. In this stage diameters seem to remain small and middle-sized. The available assemblage occurs in 525-550 AD, with a possible extension into the middle or a later 6th century AD (no. 41 belongs to an Athenian Agora context with later intrusions, which makes it also a possible post-550 AD example).

Around 550 AD, with a possible starting date of 525-550 AD, this line concerns Hayes 3G. This shape can be dated very coherently to the middle of the 6th century and this assemblage shows a strong morphological homogeneity. Its rim diameters vary between medium (nos. 44-45) and large-sized vessels (nos. 42-43 and 46-47), with a possible predominance of the latter. Their walls can be slightly curved (no. 47), sometimes almost rectilinear (no. 46), but some examples evolve into S-shaped profiles (nos. 42-45). Rims remain upward, but are thicker than in the previous Hayes 3F/G. Their shape is rectangular, with light roll (produced through an undercut) at the bottom and light inner concavity (nos. 42-45), but one may suppose that around 550+ AD they become more squarish, with a lower profile and flat top (nos. 46-47), while the rectangular-shaped rims have rounded-top rims. These two last cases belong to Lisbon's sector of Palácio dos Condes de Penafiel, where its dump-pit fill may be dated somewhere in the third quarter of 6th century AD (Quaresma and Silva, forthcoming).

One sherd from the region of Lisbon (no. 48) presents a bizarre profile. Its rim thickness relates it to type Hayes 3/10, in spite of its extremely irregular surfaces. The inner surface is flat, but, on the contrary, the outer one produces a rolled and thick bottom, as well as a rounded top, which is externally outlined by a narrow groove. The wall is irregular, with perhaps an S-shaped profile. This stage of the evolutionary line develops in the third quarter of 6th century AD, what the rather square rim profiles of Hayes 3G already suggested. This individual of Hayes 3/10 was also found near Lisbon, at Alto do Cidreira, where a series of deposits make up a layer of 550+ AD, perhaps dated also somewhere within the third quarter of 6th century AD (Sepúlveda, Bolila and Santos, 2014-2015) (fig. 5).

2.3. Evolutionary line 3

A third hypothetical evolutionary line is made of squarish rims from the very beginning. Vessels of type Hayes 3F/G (nos. 49-53), with a more hooked rim profile, are for this reason closer to type Hayes 3F, but present a bevelled rim top and inner rim concavity. Their

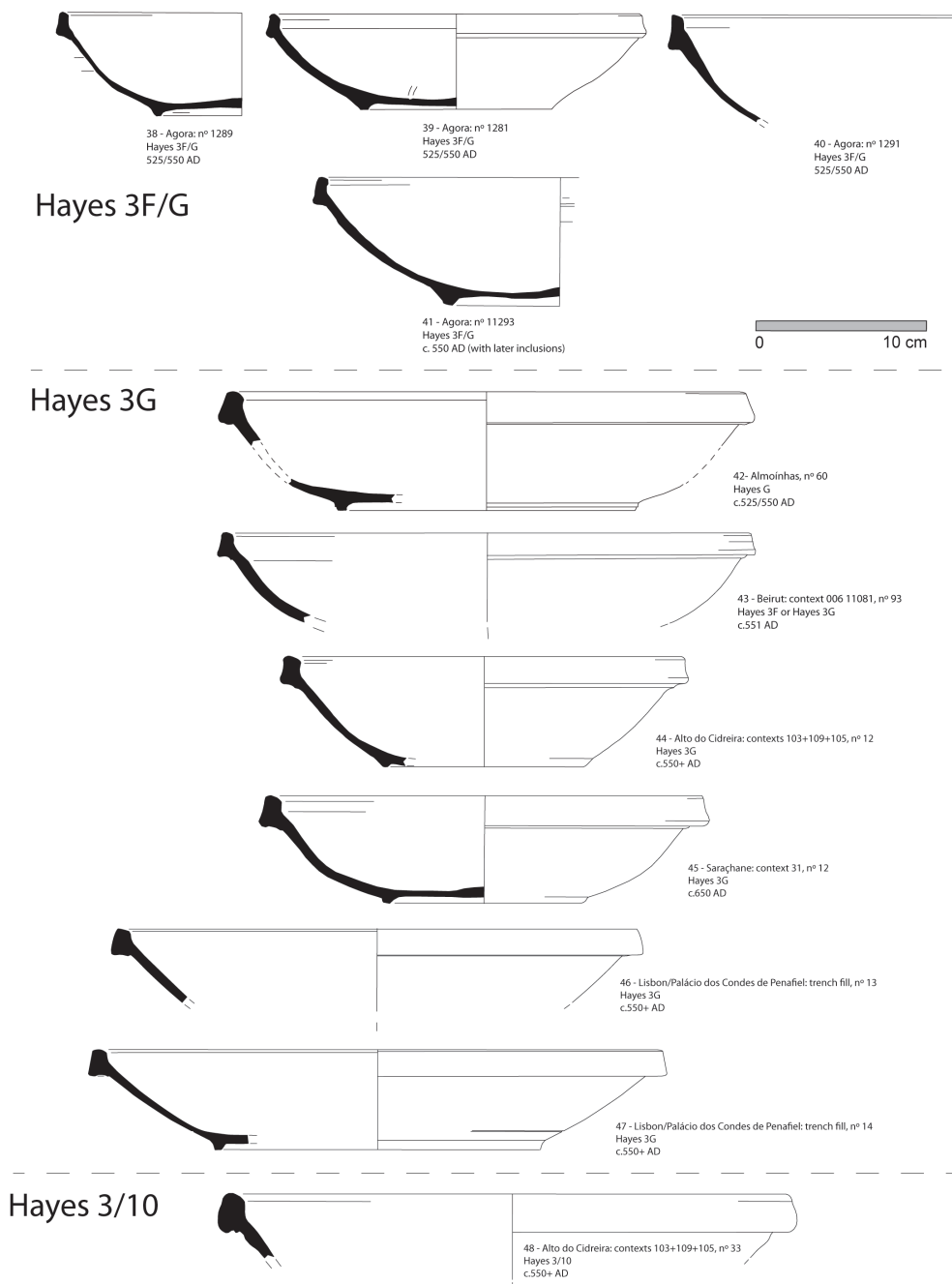
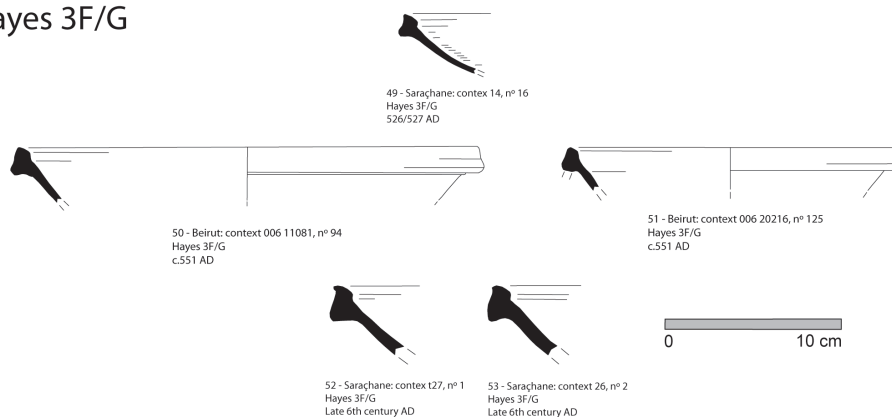


Figure 5. Evolutionary line 2.

Hayes 3F/G



Hayes 3G

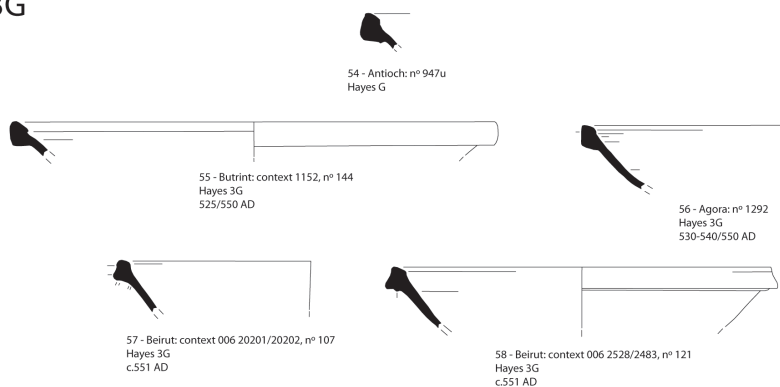
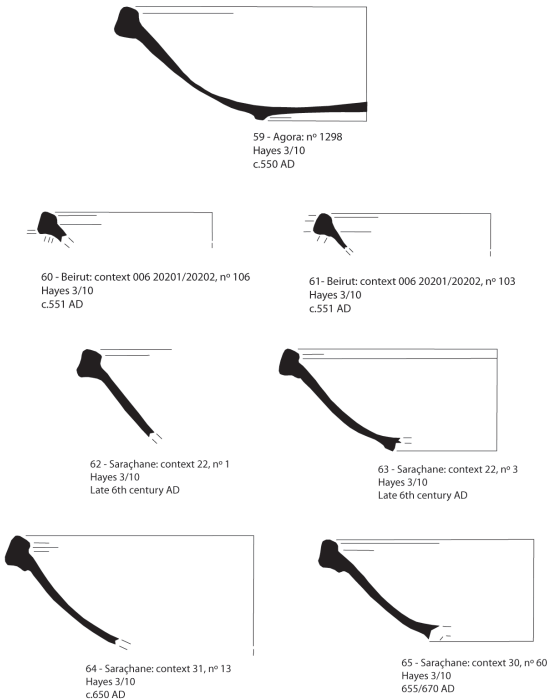


Figure 6. Evolutionary line 3.

diameter can be medium (nos. 49-51) or large-sized (nos. 52-53) and their walls normal or thickened. These two last cases are known through residual presences in the late 6th century AD, but they perhaps belong to the third quarter of the century, since nos. 49-51, with narrower walls, were found in layers from 526/527 and 551 AD.

Most probably at the same time (525-550 AD), Hayes 3G emerges (nos. 54-58), with more perfectly squared rims, but the same variability of diameters (medium and large-sized). In contrast, the walls seem now to be only of normal thickness. The bevel of the rim top is now standard and very well marked. The outer face of the rims can be now flat (nos. 54-56), although some rims have a concave outer face with a rolled bottom (nos. 57-58). This first morphology (Hayes 3F/G) presents curved walls as well as some slightly

Hayes 3/10



Hayes 10A

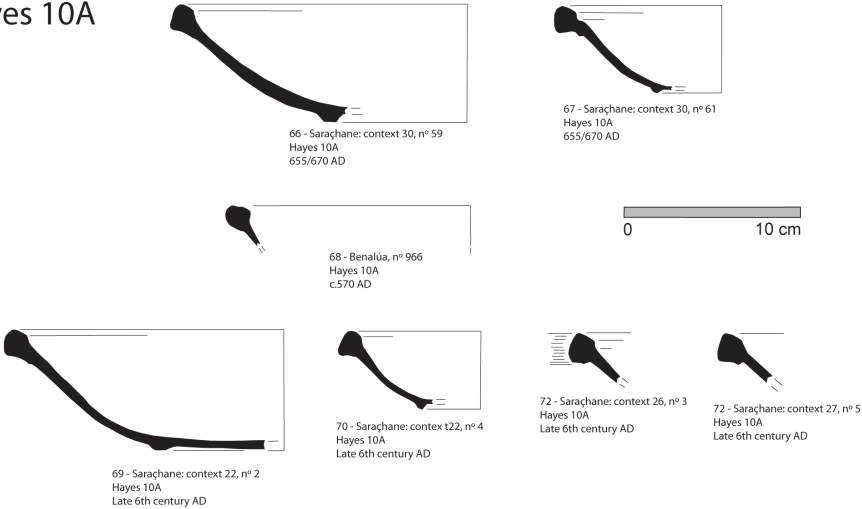


Figure 7. Evolutionary line 3.

S-shaped profiles (no. 53), while this feature can barely be observed in the second stage (Hayes 3G), through with (?) no. 58. This seems to be a coherent evolution, since the next two phases are barely represented by this feature, which probably disappears around the middle of the 6th century AD (fig. 6).

A subsequent development is marked by Hayes 3/10 (nos. 59-65). Progressive advanced thickening of rims from c. 550 AD onwards leads to larger examples, which can often be rolled at the bottom (nos. 59-62, 64-65), while a few vessels present flat, outer rim surfaces (no. 61). Walls are usually curved and slightly S-shaped in a few cases (nos. 63 and 65). This Hayes 3/10 seems not to occur after the third quarter of the 6th century AD, being found as a residual type in context 30 dated to c. 655-670 AD in Saraçhane (no. 65).

It is more reasonable to propose that type Hayes 10A (nos. 66-72) is directly related to this evolutionary line, taking into account both the morphology of rims and the wall profiles, strongly similar to type Hayes 3/10 of this line. Nevertheless, we can easily assume that type Hayes 10A appears when type Hayes 3/10 is still being produced. Dating no later than c. 575/580, the vessel from Benalúa (no. 68) is an exception, given its extremely rounded rim, which almost links it with a bizarre shape that could be named Hayes 6/10, even taking into account that type Hayes 6 seems to be dated to the early 6th century AD (Hayes, 1972, p. 341). Hayes 10A seems to standardise the option for thickened walls (except the bizarre aforementioned no. 68) and the rim may be more squarish in the earlier examples (nos. 66-67), moving gradually into slightly rounded profiles during the second half of the 6th century AD (fig. 7).

3. Conclusions

As we have stated above, more than subsequent chronological lines, stratigraphic evidence points to a mosaic evolution during the central decades of the 6th century AD. The role of the second half of the 6th century is still quite problematic, in face of the scarcity of good contexts related to late forms of PRS (Benalúa is the main exception). For this reason, the transition to type Hayes 10A remains barely known and probably included in a mosaic-evolution alongside types Hayes 3F, 3F/G, 3G and 3G var. during the third quarter of the 6th century AD.

Line 1 presents more vertical rims, with strong morphological link to Hayes 3F, given the light thickening of rims all over this line. The deepness of vessels and the thickness of walls increase in the central decades of the 6th century AD, with respect to Hayes 3G var. The size of diameters remains stable, but a feature becomes standard: the stronger deepness of walls produces contra-curve shapes with an incipient S-profile at their upper segment. In spite of the similar apparent chronology, Hayes 3G var. seems to derive from Hayes 3G, being a final morphology of this Evolutionary line 1.

Line 2 is the best-represented evolutionary line. It is made of deep, large, thick-walled vessels, with thick, vertical rims. This line seems to centre its lifespan in 525-550 AD, with

a possible extension into the third quarter of the 6th century AD, when it becomes type Hayes 3/10, deriving from Hayes 3G shapes around 550 AD. This evolution into Hayes 3/10 remains nevertheless barely known and apparently scarce, in spite of some suggestive transitional profiles around 550+ AD (nos. 46-47).

A third hypothetic evolutionary line presents a larger spectrum of shapes and longer evolution, like Evolutionary line 1. Nevertheless, line 1 does not end with Hayes 3/10, nor Hayes 10. Line 3 is made of squarish rims. It started in 525-550 AD with vessels of Hayes 3F/G and 3G, with a more rolled-rim profile in the first variant. Their diameter can be either-medium or large and their walls either normal or thickened. Around the middle (and the third quarter?) of the 6th century AD this line reaches the morphology of Hayes 3/10 in a more evident way than line 2. For this reason, it is more reasonable to propose that type Hayes 10A is directly related to this evolutionary line.

Stratigraphies show again in this case, that Hayes 10A emerges alongside Hayes 3/10, taking into account that S. Giovanni di Ruoti/Period 3B (middle of the 6th century AD) contains Hayes 3E, 3F and 10A (Reynolds, Bonifay and Cau, 2011: 20). Nevertheless, the Benalúa context points to a scarce distribution of Hayes 10A up to c. 570 AD (Reynolds, 1987).

Finally, it seems important to stress that these hypothetical evolutionary lines are proposed as possible research tools for further studies, that is, they are not conclusive. Typological studies on PRSW, based always on consumption sites, need urgently to be compared to the production sites of this typology. The lack of knowledge about both sites and regions, which have produced PRSW, seems one of the major problems for the correct understanding of morphological evolutions (as well as some fabric descriptions, which are not discussed in this paper).

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